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Liquidity Management and Profitability: A Case Study of Listed Manufacturing Companies in Sri Lanka

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***Abstract*— Liquidity management and profitability are very important issues in the growth and survival of business and the ability to handle the trade-off between the two a source of concern for financial managers.The study is also aimed at finding the effect of changes in liquidity levels on profitability of manufacturing companies in Sri Lanka. The study covered listed manufacturing companies in Sri Lanka over a period of past 5 years from 2008 to 2012. Correlation and regression analysis were used in the analysis and findings suggest that there is a significant relationship exists between liquidity and profitability among the listed manufacturing companies in Sri Lanka. Suggested that Inventory Sales Period (ISP), Current Ratio (CR)and are significantly correlated with Return on Asset (ROA), Operating Cash Flow Ratio (OCFR)are significantly correlated with Return on Equity (ROE) 5 percent level of significance. At the same time ISP and OCFR also are significantly correlated with ROA, Creditors Payment Period (CPP) also is significantly correlated with ROE at 1 percent level of significance.**

Keywords- Liqudity; Liquidity Management, Profitability.

I. INTRODUCTION

The concept of Liquidity has been a source of worry to the management of firms of the uncertainty of the future. The liquidity of an asset means how quickly it can be transformed into cash. When referring to company liquidity one usually means its ability to meet its current liabilities and is usually measured by different financial ratios www.investorwords.com). The profitability of a company can by described as its ability to generate income which surpasses its liabilities. Profitability is usually measured by different ratios such as ROA and ROE.(www.businessdictionary.com) Efficient liquidity management involves planning and controlling current assets and current liabilities in such a manner that eliminates the risk of the inability to meet due short-term obligations, on one hand, and avoids excessive investment in these assets, on the other. This is due in part to the reduction of the probability of running out of cash in the presence of liquid assets. Liquidity is having enough money in form of cash, to meet your financial obligations. Alternatively, the case with assets can be converted in to cash. Profitability is measure of the amount by which a company`s revenue exceeds its relevant expenses. Liquidity and profitability are the two corners of a straight line. If you are on the line and move towards one, you automatically move away from the other. In other words, there is a trade – off between liquidity and profitability.(Puneet & Parmil, 2012)

Liquidity management is a concept that is receiving serious attention all over the world especially with the current financial situations and the state of the world economy. The concern of business owners and managers all over the world is to devise a strategy of managing their day to day operations in order to meet their obligations as they fall due and increase profitability and shareholder's wealth.

Liquidity management, in most cases, are considered from the perspective of working capital management as most of the indices used for measuring corporate liquidity are a function of the components of working capital. The importance of liquidity management as it affects corporate profitability in today's business cannot be over emphasis. The crucial part in managing working capital is required maintaining its liquidity in day-to-day operation to ensure its smooth running and meets its obligation (Eljelly, 2004). Liquidity management is very important for every organization that means to pay current obligations on business, the payment obligations include operating and financial expenses that are short term but maturing long term debt. Liquidity ratios are used for liquidity management in every organization. That greatly effect on profitability of organization.

Liquidity profitability relationship is linked with the continuance of the appropriate intensity of working capital. This concept tries to strike a level of liquidity that offers a relaxed balance of liquidity and profitability, that is to say, the investment of the company in working capital must be sufficient. It may generally be assumed that there is always a negative relationship between the two. But it is not true in all the cases. The existence of a linear relationship, though not continuous, between profitability and liquidity corresponding to the holding of current assets at least up to a certain level by firms, is not an impracticable proposition**. (**Bhunia, Khan &Mukhuti, 2012).

II. SIGNIFICANCE OF THE STUDY

Liquidity plays a significant role in the successful functioning of a business firm. A firm should ensure that it does not suffer from lack-of or excess liquidity to meet its short-term compulsions. A study of liquidity is of major importance to both the internal and the external analysts because of its close relationship with day-to-day operations of a business (Bhunia,2010). Business financing, especially at the wake of the global financial crisis, has become a major source of concern for business managers as bank loans are becoming too expensive to maintain as a result of tightening of both the local and international financial market and the reluctance of the public to invest in the share of companies sequel to the crash of the capital market. These situations compel business managers to device various strategies of managing internally generated revenue to enhance their chances of making profit and meeting existing shareholders expectations. Liquidity management and profitability are very important in the development, survival, sustainability, growth and performance. Profitability does not translate to liquidity in all cases. A company may be profitable without necessarily being liquid. Therefore, liquidity should be managed in order to obtain an optimal level, that is, a level that avoid excess liquidity which may translate to poverty of ideas by management. Also liquidity level should not fall below minimum requirement as it will lead to the inability of the organization to meet short term obligation.

III. STATEMENTOF THEPROBLEM

One of the major reasons that may cause liquidation is illiquidity and inability to make adequate profit. These are some of the basic ingredient of measuring the "going concern" of an establishment. For these reasons companies are developing various strategies to improve their liquidity position. Strategies which can be adapted within the firm to improve liquidity and cash flows concern the management of working capital, areas which are usually neglected in times of favorable business conditions (Pass and Pike, 1984). The problems to be addressed by this study are to evaluate the relationship between liquidity management and profitability of some listed manufacturing companies in Sri Lanka.

IV. OBJECTIVES

The main objective of the study is to find out the impact of liquidity management and profitability of manufacturing companies in Sri Lanka.

- The following sub objectives are considered for the above purpose.
- To identify the factors which are significantly contribute to the liquidity management and profitability.
- To find out the relationship between liquidity management and profitability.
- To suggest some measures to enhance the profitability of Listed Manufacturing Companies.

V. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Abuzarand Eljelly (2004) evaluated the relation between profitability and liquidity, as measured by current ratio and cash gap (cash conversion cycle) on a sample of joint stock companies in Saudi Arabia. The study found significant negative relation between the firm's profitability and its liquidity level, as measured by current ratio. This relationship is more evident in firms with high current ratios and longer cash conversion cycles. At the industry level, however, the study found that the cash conversion cycle or the cash gap is of more importance as a measure of liquidity than current ratio that affects profitability.

Garcia Teruel and Martinez Solano (2007) studied the effects of working capital management on the profitability of a sample of small and medium sized Spanish firms. Those managers can create value by reducing their inventories and the number of days for which their accounts are outstanding. In addition, shortening the cash conversion cycle also improves the firm's profitability.

Chakraborty (2008) evaluated the relationship between working capital and profitability of Indian pharmaceutical companies. There were two distinct schools of thought on this issue: according to one school of thought, working capital is not a factor of improving profitability and there may be a negative relationship between them, while according to the other school of thought, investment in working capital plays a vital role to improve corporate profitability, and unless there is a minimum level of investment of working capital, output and sales cannot be maintained - in fact, the inadequacy of working capital would keep fixed asset inoperative.

Singh (2008) found that the size of inventory directly affects working capital and its management. Suggested that inventory was the major component of working capital, and needed to be carefully controlled.

Singh and Pandey (2008) examined that, the management of working capital is essential as it has a direct impact on profitability and liquidity. Working capital components and found a significant impact of working capital management on profitability for Hindalco Industries Limited. Of this work and reflects some decisive evidences that affirm its viability, as may be marked here it. Nor has any previous research examined the liquidity position and the existence of liquidity and profitability relationship of private sector steel companies in India.

Walt (2009) investigated that profitability is more important because profit can usually be turned into a liquid asset, and that liquidity is also important but does not mean that the company is profitable. Don (2009), while acknowledging the relative importance of both, submits that liquidity is more important because it has to do with the immediate survival of the company.Dilemma in liquidity management is to achieve desired tradeoff between liquidity and Profitability (Rahemanet all, 2007). Ignatius Ekanem (2010) examined to focus on liquidity management in small firms.Paper uses a qualitative methodology that involves in-depth, semi-structured interviews and direct observation, conducted

longitudinally in eight case study companies. Suggest that liquidity management is either based on owner-manager past experiences, experiences of others or is strongly influenced by industry norms, which are shared rules within the industry, and not based on the calculation of costs and benefits of particular causes of action.

Furthermore, Velnampyand Nimalathasan(2010) evaluated the association between firm size and profitability of all the branches of Bank of Ceylon and Commercial Bank of Ceylon ltd over a period of 10 years from 1997 to 2006. Findings reveal that, there is a positive relationship between firm size and profitability in Commercial Bank of Ceylon ltd, but there is no relationship between firm size and profitability in Bank of Ceylon.

Ajanthan (2013)investigated the relationship between liquidity and profitability of trading companies in Sri Lanka.The study covered 08 listed trading companies in Sri Lanka over a period of past 5 years from 2008 to 2012. Correlation& regression analysis and descriptive statistics were used in the analysis and findings suggest that there is a significant relationship exists between liquidity and profitability among the listed trading companies in Sri Lanka.

From the literature review the following hypotheses are developed for the study purpose.

H_1: Liquidity Management has an impact on Profitability

H_2: Liquidity Management and Profitability is significantly correlated.

H_3: All factors determine the Liquidity Management is significant.

VI. CONCEPTUAL FRAME WORK

Based on the literatures, the following conceptual frame work is formulated.

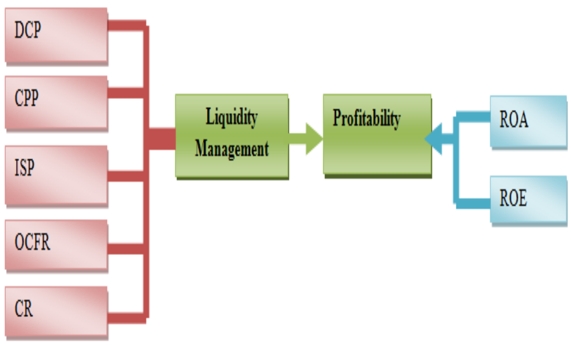

Figure 1. Conceptual Framework

Where:

DCP : Debtors Collection Period

CPP : Creditor Payment Period

ISP : Net Profit to Value Added Ratio

OCFR : Value Added to Stock ratio

CR : Operating Cash Flow Ratio

ROA : Current Ratio

ROE : Return on Equity

VII. METHODOLOGY

It describes research design, sampling design, data sources, reliability and validity of data and mode of analysis.

A. *Research Design*

This research will be an explanatory studies. The emphasis here is on studying a situation or a problem in order to explain the relationship between variables (i.e., Value Added and Financial Performance)

B. *Sampling design*

The sample of this study composed of listed manufacturing companies from Manufacturing Sector of Colombo Stock Exchange (CSE) for the period of 2008-2012. The scope of the study is listed manufacturing companies on Colombo Stock Exchange (CSE), Sri Lanka. Thirty one companies are listed under manufacturing sectors. Hence, out of thirty one, only ten companies are selected for the study purpose as random.

C. *Data Sources*

The research is totally based on secondary data, from the annual reports of sample companies. In some cases, some data and information have been collected from the websites of the sampled firms, different articles and papers.

D. *Reliability and Validity of the Data*

Reliability will be established with an overall Cronbach's alpha and other techniques. It will be compared our reliability value with the standard value alpha of 0.7 advocated by Cronbach (1951), a more accurate recommendation (Nunnally& Bernstein's, 1994) or with the standard value of 0.6 as recommended by Bagozzi& Yi's (1988). Secondary data for the study were drawn from audit accounts (i.e., income statement and balance sheet) of the concerned companies; therefore, these data may be considered reliable for the purpose of the study. Necessary checking and cross checking were done while scanning information and data from the secondary sources. All these efforts were made in order to generate validity data for the present study. Hence researcher satisfied content validity.

E. *Mode of Analysis*

The following Liquidity Management and profitability ratios are taken into accounts which are given below.

TABLE I. CALCULATIONS OF LIQUIDITY MANAGEMENT AND PROFITABILITY RATIOS

Liquidity Management Ratios and Its Calculations	
Debtors Collection Period	Average Trade debtors / Turnover ×365 days
Creditor Payment Period	Average Trade Creditors / Cost of Goods Sold X 365 days

Inventory Sales Period	Inventories / cost of sales X 365 days
Operating Cash Flow Ratio	Cash Flow from Operations / Current Liabilities
Current Ratio	Current Assets /Current Liability X100
Profitability Ratios and Its Calculations	
Return on Asset	Profit after interest & tax /Total assetsX 100
Return on Equity	Profit after interest & tax / Equity capital X 100

Multiple regression analysis is performed to investigate the impact of liquidity management on profitability. It is important to note that the financial profitability (ROA and ROE) depend upon debtors collection period (DCP), creditor payment period (CPP), inventory sales period(ISP), operating cash flow ratio(OCFR), and current ratio(CR).

The following five models are formulated and presented here:

ROA= β0+ β1 DCP+ β2 CCP+ β3 ISP + β4 OCFR + β5 CR + ε…………… (1)

ROE= β0+ β1 DCP+ β2 CCP+ β3 ISP + β4 OCFR + β5 CR + ε…………… (2)

Where, α , is constant, β1, β2, β3 β4, β5 and β6 are coefficients of variables, $\in$, is error term.

VIII. Data Analysis and Discussion

A. *Multi-Co linearity*

Two major methods were used in order to determine the presence of multi-co linearity among independent variables in this study. These methodologies involved calculation of a Tolerance test and variance inflation factor (VIF) (Ahsan, Abdullah, Gunfie, & Alam, 2009). The results of these analysis are presented in table 2. Test of Co linearity.

TABLE II. Test of Co linearity

Variable	Tolerance	VIF
Debtors Collection Period	0.723	1.383
Inventory Sales period	0.331	3.022
Creditor Payment Period	0.287	3.480
Operating Cash Flow Ratio	0.654	1.945
Current Ratio	0.465	2.153

According to the Table: 2. Test of Co linearity, none of the tolerance level is < or equal to 1; and also VIF values are perfectly below 10.Thus the measures selected for assessing independent variable in this study do not reach levels indicate of multi-co linearity.

TABLE III. Correlation Matrix

Variables	ROA	ROE	DCP	ISP	CPP	OCFR	CR
DCP	-0.212 (.557)	-.330 (.351)	1				
ISP	0.694* (.026)	0.717* (.020)	-0.618 (.057)	1			
CPP	0.778** (.008)	0.848** (.002)	-0.528 (.117)	0.876** (.001)	1		
OCFR	0.807** (.005)	0.652* (.041)	-0.526 (.118)	0.818** (.004)	.844** (.002)	1	
CR	.674* (.033)	.541 (.106)	-0.255 (.407)	0.463 (.178)	.599 (.067)	.732* (.016)	1

*Correlation is significant at the 0.05 level (2-tailed)

** Correlation is significant at the 0.01 level (2-tailed

It is found that from table-3 describes the correlation between liquidity management and profitability. Which indicates that ISP and CR are significantly correlated with ROA 5 percent level of significance. At the same time CPP and OCFR also is significantly correlated with ROA at 1 percent level of significance.

This indicates that ISP and OCFR are significantly correlated with ROE5 percent level of significance. At the same time CPP also is significantly correlated with ROE at 1 percent level of significance.

Finally the rest of other variables are not correlated. Then a multiple regression analysis was performed to identify the predictors of profitability variables as conceptualized in the models. A step wise variable selection was used in the regression analysis and Table-4 provides the summary measure of the models.

TABLE IV. Predictor of Financial Performance – Model Summary

Details	**ROA**	**ROE**
DCP	1.239 (0.255)	0.715 (0.498)
ISP	0.269 (0.796)	-0.268 (0.796)
CPP	0.426 (0.324)	4.525 (0.002)
OCFR	3.863 (0.005)	-0.613 (0.559)
CR	-0.582 (0.577)	0.206 (0.843)
Constant	-2.294 t=-0.963; p=.364	-2.328 t=-1.236; p=0.251
R	0.87	0.848
R^2	0.651	0.719
Adjusted R^2	0.607	0.684
Standard Error	3.1241	2.1177
F Value	14.920 (0.005)	20.474 (0.002)

From the table-4; it is seen that the specification of the five predictor variables (DCP, ISP, CPP, OCFR and CR) in the above model reveals that the ability to predict the profitability. (R^2 =0.651, and 0.719respectively).

In R^2value of 0.651which is in the model 1 denotes that 65.1 % of observed variability in ROA can be explained by the differences in the independent variables. Remaining 34.9 % variance in the return on asset is attributed to other variables. In this model 2, R^2value of 0.719which is denotes 71.9 % of observed variability in return on investment can be explained by the differences in the independent variables. Remaining 28.1% variance in the return on investment is attributed to other variables. In this models summary, that the value of an adjusted R^2 0.607and 0.684, slightly less than the value of adjusted R^2. An examination of the model summary in conjunction with ANOVA (F–value) indicates that the model explains the most possible combination of predictor variables that could contribute to the relationship with the dependent variables.

IX. HYPOTHESIS TESTING

Serial No	Hypothesis	Tools	Accepted/ Rejected
H_1	Liquidity Management has an impact on Profitability	Regression	Partially Accepted
H_2	Liquidity Management and Profitability is significantly correlated.	Correlation	Partially Accepted
H_3	All factors determine the Liquidity Management is significant.	Correlation	Partially Accepted

X. CONCLUSION

Consequently, this study will disclose how liquidity management will handle these uncertainties and determine their effects on profitability. The study is aimed at discovering the specific factors that are useful in enhancing the profitability and liquidity position of the companies. Management of liquidity and profitability has become a crucial issue in today's cut throat competition. If the firm decreases its liquidity the profitability would be high .the results shows that there is a negative relationship between profitability and liquidity.so it is essential for the every firm to maintain equilibrium between profitability and liquidity.

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